Patent claims

1. A method for coating a surface of a component, comprising:

masking certain regions of the surface of the component which are not to be coated; and

coating masked the component, wherein a powder without added binder is used as masking.

2. The method as claimed in claim 1, wherein the masking is applied to the regions from a suspension comprising the powder.

3. The method as claimed in claim 2, wherein the suspension used consists only of a carrier medium and a powder.

4. The method as claimed in claim 3, wherein the carrier medium used is water.

5. The method as claimed in claim 2, wherein a suspension comprising 30-50% by weight of carrier medium and 70-50% by weight of powder is used.

6. The method as claimed in claim 2 , wherein the suspension is sprayed on.

7. The method as claimed in claim 1, wherein a ceramic powder is used.

8. The method as claimed in claim 1, wherein a metallic powder is used.

9. The method as claimed in claim 7, wherein the ceramic powder used is at least partially a zirconium oxide powder or boron nitride powder.

10. The method as claimed in claim 1, wherein the coating is evaporation-coated onto the component having the masking on an inner surface of the component.

11. The method as claimed in claim 1, wherein an aluminium layer is applied to the component.

12. The method as claimed in claim 10, wherein the coating is performed by a chemical vapor deposition (CVD) process.

13. The method as claimed in claim 10, wherein the coating is performed by a physical vapor deposition (PVD) process.

14. The method as claimed in claim 1, wherein the masking is applied in such a way that it has a surface which is impervious to a metal or ceramic vapor.

15. The method as claimed in claim 10, wherein the masking is removed by high-pressure water blasting over a large area after the coating has been applied.

16. The method as claimed in claim 1, wherein the process is used for newly produced components.

17. The method as claimed in claim 1, wherein the process is used for components which are to be refurbished.

18. The method as claimed in claim 1, wherein a grain size distribution of the powder for the masking is

selected in such a way that the masking has an impervious surface.

19. The method as claimed in claim 1, wherein various powders with various grain size distributions are used for the masking.

20. The method as claimed in claim 19, wherein at least one coarse powder and at least one fine powder are used for the masking.

21. The method as claimed in claim 1, wherein 10% by weight to 30% by weight and 70% by weight to 90% by weight of coarse powder is used for the masking.

22. The method as claimed in claim 1, wherein the coating takes place at a coating temperature which is lower than the sintering temperature of the powder which has a coarse fraction and a fine fraction.

23. A coated component comprising: a masking layer applied on selected regions of the surface of the component which are not to receive a coating, the masking layer consists only of powder.

24. The component as claimed in claim 23, wherein the powder is ceramic.

25. The component as claimed in claim 23, wherein the masking has a thickness of 100 µm to 400 µm.

26. The component as claimed in claim 23, wherein the masking has an impervious surface which is such that it is impossible for any coating material to penetrate through the masking to the region.

27. The component as claimed in claim 23, wherein the masking includes various powders with various grain size distributions.

28. The component as claimed in claim 23, wherein the masking includes at least one coarse powder and at least one fine powder.

29. The component as claimed in claim 23, wherein the powder consists of zirconium oxide or boron nitride.

30. The component as claimed in claim 27, wherein the masking contains 10% by weight to 30% by weight of fine powder, and
70% by weight to 90% by weight of coarse powder.

31. The component as claimed in claim 23, wherein the mean grain size distribution of the powder of the masking has the following values:
d_{10} = 0.1 µm – 6 µm,
d_{50} = 1 µm – 15 µm,
d_{90} = 6 µm – 40 µm.

32. The component as claimed in claim 22, wherein the coarse powder has a grain size distribution with which sintering does not occur or scarcely occurs during the coating.

33. The component as claimed in claim 23, wherein the component consists of an iron-base, nickel-base or cobalt-base superalloy.

34. The component as claimed in claim 23, wherein the material which is intended for coating shows bad or no wetting to the material of the masking.

35. A powder for masking a component which is intended for coating and has a masking layer on certain regions of the surface of the component which are not to recive a coating, wherein the masking consists only of powder, the powder comprising:

10% by weight to 30% by weight of fine powder; and

70% by weight to 90% by weight of coarse powder.

36. The powder as claimed in claim 35, wherein the mean grain size distribution of the powder has the following values:

d_{10} = 0.1 µm - 6 µm,

d_{50} = 1 µm - 15 µm,

d_{90} = 6 µm - 40 µm.

37. The method as claimed in claim 1, wherein the component is a turbine blade or vane.

38. The component as claimed in claim 23, wherein the component is a gas turbine or steam turbine component.

39. The component as claimed in claim 38, wherein the component is a turbine blade or vane.

40. The component as claimed in claim 25, wherein the masking has a thickness of 180 µm to 200 µm.

41. A powder as claimed in claim 35, wherein the powder includes 15% by weight to 20% by weight of fine powder and 80% by weight to 85% by weight of coarse powder.

42. The powder as claimed in claim 36, wherein the mean grain size distribution of the powder has the following values:
d10 = 0.2 µm - 1 µm,
d50 = 3 µm - 6 µm,
d90 = 15 µm - 25 µm.

43. The method as claimed in claim 5, wherein a suspension comprising 40% by weight of carrier medium and 60% by weight of powder is used.

44. The method as claimed in claim 9, wherein the ceramic powder used is 100% of a zirconium oxide powder.

45. The method as claimed in claim 9, wherein the ceramic powder used is 100% of a boron nitride powder.

46. The method as claimed in claim 1, wherein the component is a component of a combustion turbine.